1. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-14x^2 + 8x + 4 = 0$$

A. $x_1 \in [-17.37, -16.32]$ and $x_2 \in [17.17, 17.55]$

B. $x_1 \in [-12.56, -11.5]$ and $x_2 \in [4.13, 5.1]$

C. $x_1 \in [-2.22, -0.67]$ and $x_2 \in [0.3, 0.6]$

D. $x_1 \in [-0.56, 0.35]$ and $x_2 \in [0.84, 0.98]$

E. There are no Real solutions.

---

2. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$81x^2 + 63x + 10$$

A. $a \in [0.6, 1.3]$, $b \in [15, 25]$, $c \in [-2.1, 2.5]$, and $d \in [45, 47]$

B. $a \in [7.3, 10.1]$, $b \in [-1, 10]$, $c \in [8.6, 11.1]$, and $d \in [5, 11]$

C. $a \in [1.4, 4.9]$, $b \in [-1, 10]$, $c \in [26.6, 27.6]$, and $d \in [5, 11]$

D. $a \in [24.5, 28.4]$, $b \in [-1, 10]$, $c \in [2.7, 5.4]$, and $d \in [5, 11]$

E. None of the above.

---

3. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 + 38x + 24 = 0$$

A. $x_1 \in [-2.92, -2.14]$ and $x_2 \in [-0.68, -0.45]$

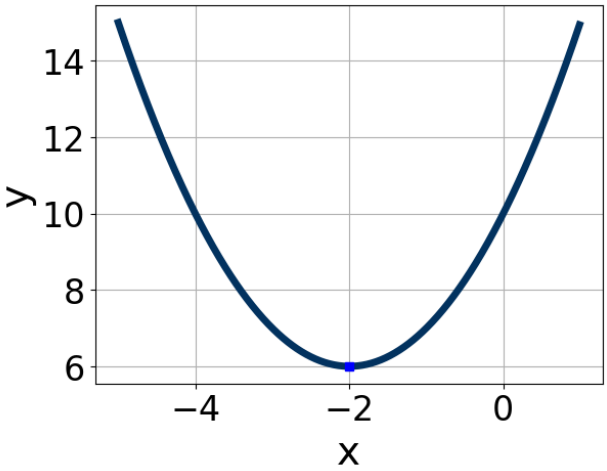
B. $x_1 \in [-4.68, -3.59]$ and $x_2 \in [-0.46, -0.32]$

C. $x_1 \in [-20.65, -19.41]$ and $x_2 \in [-18.09, -17.93]$

D. $x_1 \in [-6.19, -4.51]$ and $x_2 \in [-0.33, -0.22]$

E. $x_1 \in [-2.35, -0.81]$ and $x_2 \in [-1.29, -1.03]$

4. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0, 1.4]$, $b \in [3, 5]$, and $c \in [9, 11]$

B. $a \in [0, 1.4]$, $b \in [-4, 1]$, and $c \in [-2, 0]$

C. $a \in [0, 1.4]$, $b \in [-4, 1]$, and $c \in [9, 11]$

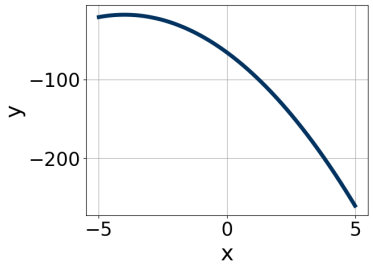
D. $a \in [-1.2, -0.3]$, $b \in [3, 5]$, and $c \in [0, 3]$

E. $a \in [-1.2, -0.3]$, $b \in [-4, 1]$, and $c \in [0, 3]$

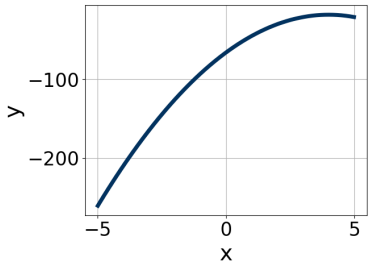
5. Graph the equation below.

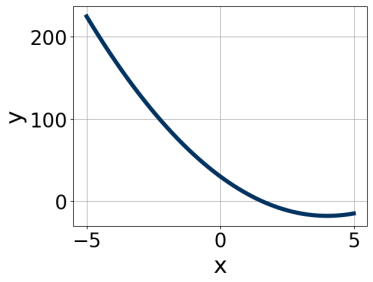
$$f(x) = (x + 4)^2 - 18$$

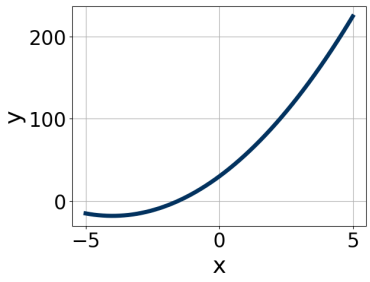
A.



B.



C. 

D. 

E. None of the above.

---

6. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 + 21x - 54 = 0$$

A. $x_1 \in [-9.03, -8.19]$ and $x_2 \in [0.16, 0.33]$

B. $x_1 \in [-7.24, -6.62]$ and $x_2 \in [0.31, 0.5]$

C. $x_1 \in [-3.06, -1.47]$ and $x_2 \in [1.19, 1.28]$

D. $x_1 \in [-45.82, -44.88]$ and $x_2 \in [23.87, 24.13]$

E. $x_1 \in [-1.66, -0.65]$ and $x_2 \in [3.46, 3.66]$

---

7. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$36x^2 - 60x + 25$$

A. $a \in [5.8, 7.1]$, $b \in [-10, -3]$, $c \in [3.5, 8.9]$, and $d \in [-8, -4]$

B. $a \in [0.3, 1.9]$, $b \in [-30, -26]$, $c \in [0.5, 2.4]$, and $d \in [-37, -24]$

C. $a \in [9.1, 15.3]$, $b \in [-10, -3]$, $c \in [2, 4.3]$, and $d \in [-8, -4]$

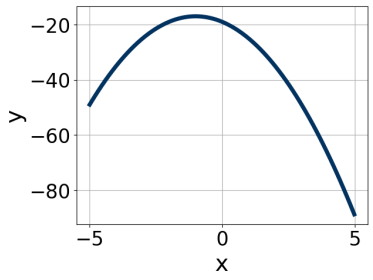
D. $a \in [1.1, 4.1]$, $b \in [-10, -3]$, $c \in [11, 13]$, and $d \in [-8, -4]$

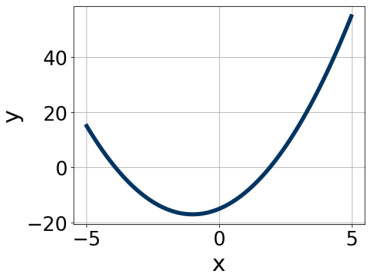
E. None of the above.

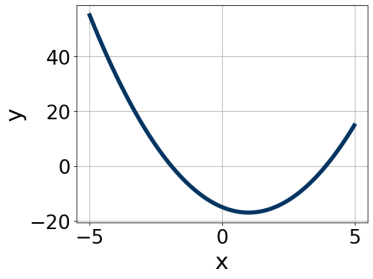
---

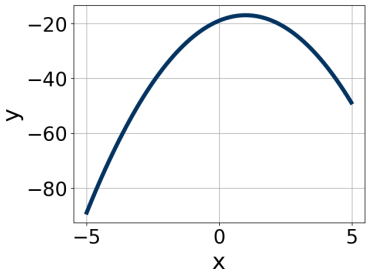
8. Graph the equation below.

$$f(x) = (x+1)^2 - 17$$

A.


C.


B.


D.


E. None of the above.

---

9. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$13x^2 + 14x - 2 = 0$$

A. $x_1 \in [-0.8, 1.1]$ and $x_2 \in [0.93, 1.6]$

B. $x_1 \in [-16.6, -14.7]$ and $x_2 \in [1.66, 1.89]$

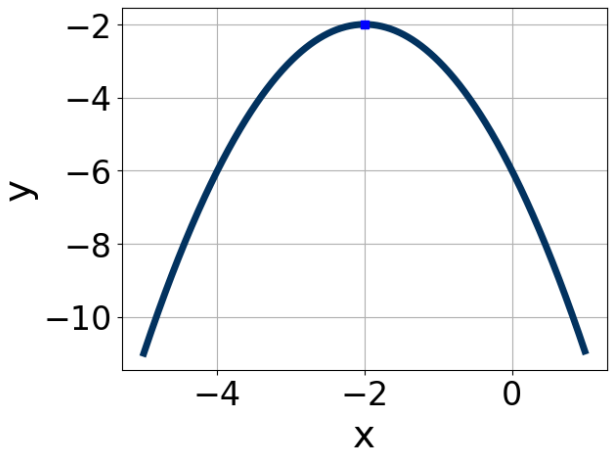
C. $x_1 \in [-3, -0.6]$ and $x_2 \in [-0.31, 0.41]$

D. $x_1 \in [-18, -16.5]$ and $x_2 \in [16.38, 17]$

E. There are no Real solutions.

---

10. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-0.2, 1.5]$, $b \in [2, 6]$, and $c \in [2, 5]$

B. $a \in [-2.7, 0.9]$, $b \in [-6, -2]$, and $c \in [-9, -5]$

C. $a \in [-0.2, 1.5]$, $b \in [-6, -2]$, and $c \in [2, 5]$

D. $a \in [-2.7, 0.9]$, $b \in [2, 6]$, and $c \in [-3, -1]$

E. $a \in [-2.7, 0.9]$, $b \in [2, 6]$, and $c \in [-9, -5]$

---

11. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$10x^2 - 9x - 8 = 0$$

A. $x_1 \in [-1.19, 0.09]$ and $x_2 \in [1, 3.1]$

B. $x_1 \in [-5.83, -5.41]$ and $x_2 \in [13.6, 15.8]$

C. $x_1 \in [-19.64, -19.51]$ and $x_2 \in [18.5, 21.1]$

D. $x_1 \in [-1.75, -0.97]$ and $x_2 \in [-0.5, 1.3]$

E. There are no Real solutions.

---

12. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 + 2x - 15$$

A. $a \in [7.29, 9.63]$, $b \in [-3, 2]$, $c \in [2.3, 3.5]$, and $d \in [3, 8]$

B. $a \in [3.77, 4.53]$, $b \in [-3, 2]$, $c \in [4.2, 7.7]$, and $d \in [3, 8]$

C. $a \in [1.92, 3.05]$, $b \in [-3, 2]$, $c \in [11.9, 14.9]$, and $d \in [3, 8]$

D. $a \in [0.51, 1.72]$, $b \in [-26, -17]$, $c \in [0.5, 1.3]$, and $d \in [17, 22]$

E. None of the above.

---

13. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 10x - 24 = 0$$

A. $x_1 \in [-1.23, -0.61]$ and $x_2 \in [1.04, 1.36]$

B. $x_1 \in [-0.75, 0.1]$ and $x_2 \in [2.35, 2.99]$

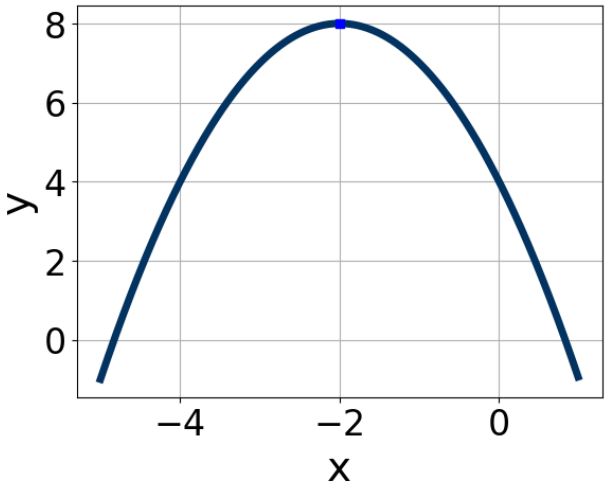
C. $x_1 \in [-4.35, -2.85]$ and $x_2 \in [-0, 0.32]$

D. $x_1 \in [-20.19, -19.24]$ and $x_2 \in [29.63, 30.02]$

E. $x_1 \in [-1.97, -0.81]$ and $x_2 \in [0.36, 0.92]$

---

14. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [0.7, 1.2]$, $b \in [-5, -1]$, and $c \in [11, 14]$

B. $a \in [0.7, 1.2], \quad b \in [1, 5], \text{ and } \quad c \in [11, 14]$

C. $a \in [-1.6, -0.6], \quad b \in [1, 5], \text{ and } \quad c \in [2, 8]$

D. $a \in [-1.6, -0.6], \quad b \in [-5, -1], \text{ and } \quad c \in [2, 8]$

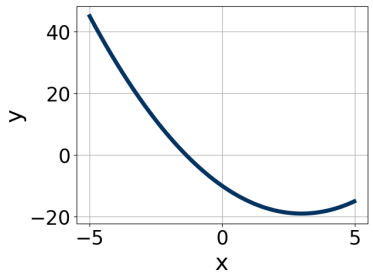
E. $a \in [-1.6, -0.6], \quad b \in [1, 5], \text{ and } \quad c \in [-12, -9]$

---

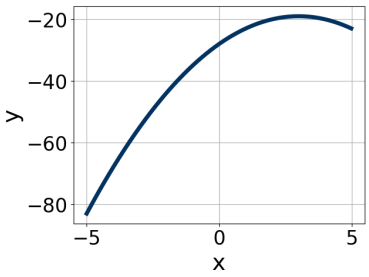
15. Graph the equation below.

$$f(x) = (x - 3)^2 - 19$$

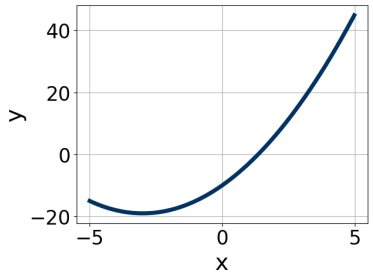
A.



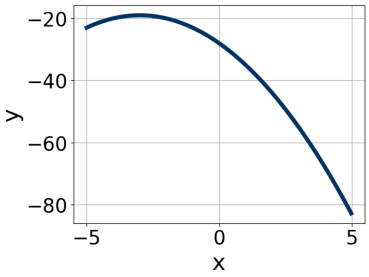
C.



B.



D.



E. None of the above.

---

16. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$25x^2 - 10x - 24 = 0$$

A. $x_1 \in [-0.53, -0.11]$ and $x_2 \in [2.39, 2.69]$

B. $x_1 \in [-4.11, -3.68]$ and $x_2 \in [0.03, 0.52]$

C. $x_1 \in [-1.71, -1.45]$ and $x_2 \in [0.31, 0.65]$

D. $x_1 \in [-0.87, -0.62]$ and $x_2 \in [1.01, 1.56]$

E. $x_1 \in [-20.08, -19.94]$ and $x_2 \in [29.98, 30.43]$

---

17. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 + 15x - 25$$

A. $a \in [1.7, 3.3]$, $b \in [-9, -4]$, $c \in [17.44, 18.8]$, and $d \in [5, 7]$

B. $a \in [-0.7, 2.4]$, $b \in [-30, -22]$, $c \in [0.21, 1.23]$, and $d \in [44, 48]$

C. $a \in [23.7, 27.8]$, $b \in [-9, -4]$, $c \in [1.83, 3.14]$, and $d \in [5, 7]$

D. $a \in [8.3, 10.3]$, $b \in [-9, -4]$, $c \in [5.77, 7.09]$, and $d \in [5, 7]$

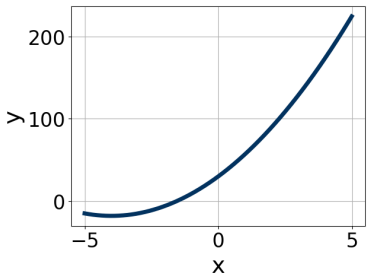
E. None of the above.

---

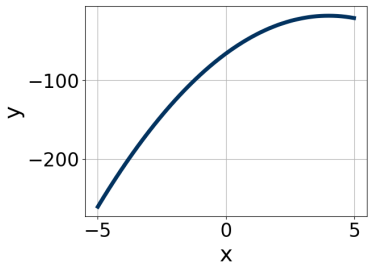
18. Graph the equation below.

$$f(x) = -(x + 4)^2 - 18$$

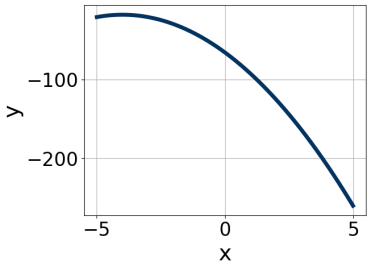
A.



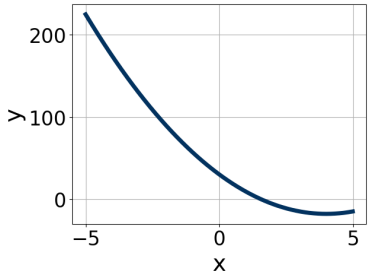
C.



B.



D.



E. None of the above.

---

19. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$19x^2 - 13x - 5 = 0$$

A. $x_1 \in [-6.3, -3.2]$ and $x_2 \in [17.66, 18.29]$

B. $x_1 \in [-23.7, -22.4]$ and $x_2 \in [23.22, 24.85]$

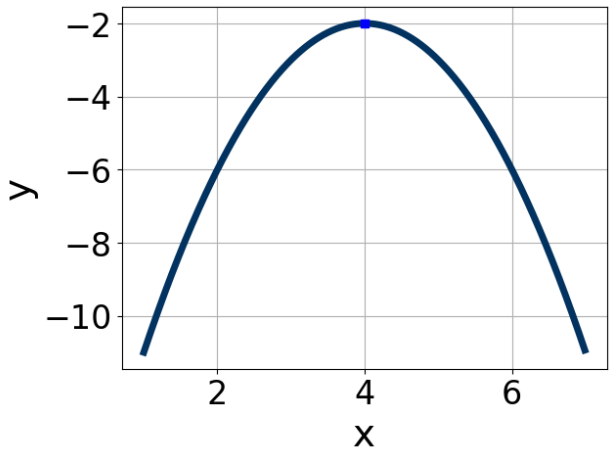
C. $x_1 \in [-1.7, -0.7]$ and $x_2 \in [0.21, 0.88]$

D. $x_1 \in [-0.5, 0.3]$ and $x_2 \in [0.8, 1.6]$

E. There are no Real solutions.

---

20. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1, 0]$, $b \in [-8, -4]$, and $c \in [-18, -16]$

B. $a \in [0, 4]$, $b \in [-8, -4]$, and $c \in [14, 16]$

C. $a \in [-1, 0]$, $b \in [-8, -4]$, and $c \in [-16, -10]$

D. $a \in [0, 4]$, $b \in [6, 9]$, and $c \in [14, 16]$

E. $a \in [-1, 0]$, $b \in [6, 9]$, and $c \in [-18, -16]$

---

21. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$-16x^2 - 15x + 8 = 0$$

A. $x_1 \in [-0.8, 0.6]$ and $x_2 \in [0.5, 2.9]$

B. $x_1 \in [-6.5, -5.4]$ and $x_2 \in [20.4, 23.1]$

C. $x_1 \in [-28.9, -26.1]$ and $x_2 \in [25.8, 28.3]$

D. $x_1 \in [-1.4, -1.2]$ and $x_2 \in [-0.1, 0.8]$

E. There are no Real solutions.

---

22. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$54x^2 - 69x + 20$$

A. $a \in [1.1, 2.9]$, $b \in [-8, 1]$, $c \in [26.7, 27.1]$, and $d \in [-5, 6]$

B. $a \in [4.8, 7.1]$, $b \in [-8, 1]$, $c \in [7, 10.5]$, and $d \in [-5, 6]$

C. $a \in [16.5, 18.1]$, $b \in [-8, 1]$, $c \in [2.1, 4.6]$, and $d \in [-5, 6]$

D. $a \in [-1, 1.9]$, $b \in [-49, -44]$, $c \in [-1.6, 1.9]$, and $d \in [-26, -22]$

E. None of the above.

---

23. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$20x^2 + 21x - 54 = 0$$

A. $x_1 \in [-45.86, -43.9]$ and $x_2 \in [24, 24.04]$

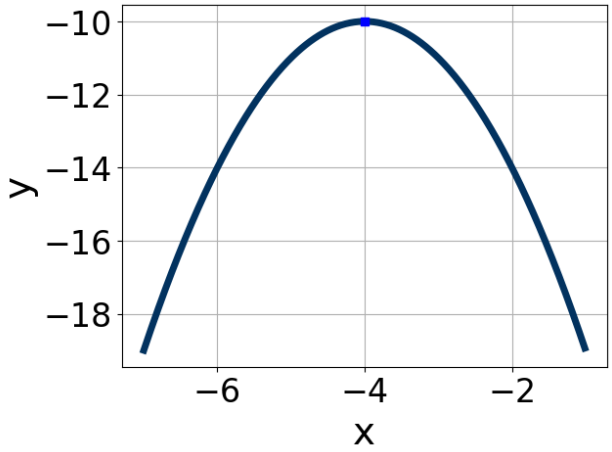
B. $x_1 \in [-2.93, -1.16]$ and $x_2 \in [1.15, 1.23]$

C. $x_1 \in [-9.52, -7.6]$ and $x_2 \in [0.23, 0.33]$

D. $x_1 \in [-7.78, -6.38]$ and $x_2 \in [0.32, 0.43]$

E. $x_1 \in [-1.46, 0.27]$ and $x_2 \in [2.34, 2.49]$

24. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-2.3, 0]$, $b \in [7, 9]$, and $c \in [-29, -23]$

B. $a \in [-2.3, 0]$, $b \in [-8, -5]$, and $c \in [-29, -23]$

C. $a \in [-0.8, 2]$, $b \in [7, 9]$, and $c \in [5, 7]$

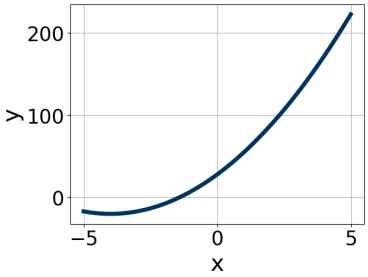
D. $a \in [-0.8, 2]$, $b \in [-8, -5]$, and $c \in [5, 7]$

E. $a \in [-2.3, 0]$, $b \in [7, 9]$, and $c \in [-9, 0]$

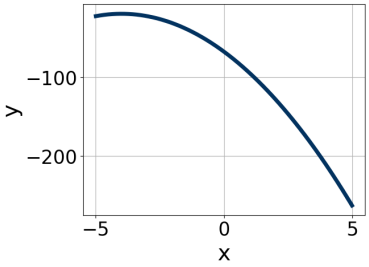
25. Graph the equation below.

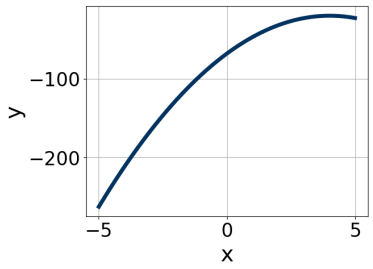
$$f(x) = -(x - 4)^2 - 20$$

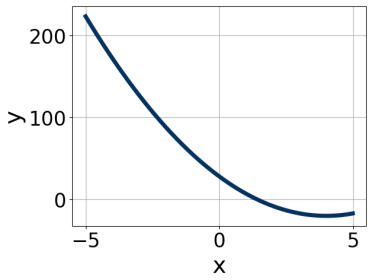
A.



B.



C. 

D. 

E. None of the above.

---

26. Solve the quadratic equation below. Then, choose the intervals that the solutions x_1 and x_2 belong to, with $x_1 \leq x_2$.

$$15x^2 - 38x + 24 = 0$$

A. $x_1 \in [17.89, 18.1]$ and $x_2 \in [19.88, 20.11]$

B. $x_1 \in [0.34, 0.59]$ and $x_2 \in [3.67, 4.24]$

C. $x_1 \in [1.15, 1.44]$ and $x_2 \in [1.18, 1.44]$

D. $x_1 \in [0.55, 0.63]$ and $x_2 \in [2.51, 2.95]$

E. $x_1 \in [0.66, 0.89]$ and $x_2 \in [2.33, 2.46]$

---

27. Factor the quadratic below. Then, choose the intervals that contain the constants in the form $(ax + b)(cx + d); b \leq d$.

$$24x^2 + 38x + 15$$

A. $a \in [2.83, 5.18]$, $b \in [-4, 5]$, $c \in [5.75, 6.63]$, and $d \in [4, 6]$

B. $a \in [0.48, 1.02]$, $b \in [14, 25]$, $c \in [-0.66, 1.05]$, and $d \in [17, 21]$

C. $a \in [7.83, 8.35]$, $b \in [-4, 5]$, $c \in [2.9, 3.37]$, and $d \in [4, 6]$

D. $a \in [1.49, 2.68]$, $b \in [-4, 5]$, $c \in [10.76, 12.3]$, and $d \in [4, 6]$

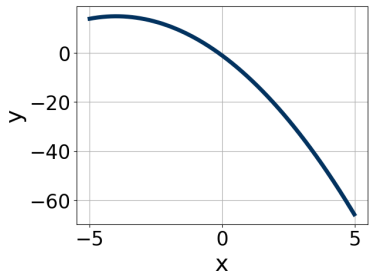
E. None of the above.

---

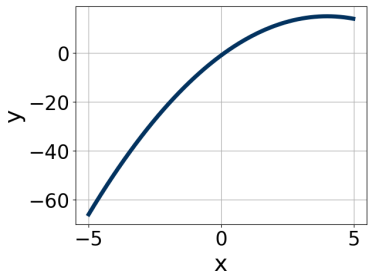
28. Graph the equation below.

$$f(x) = -(x-4)^2 + 15$$

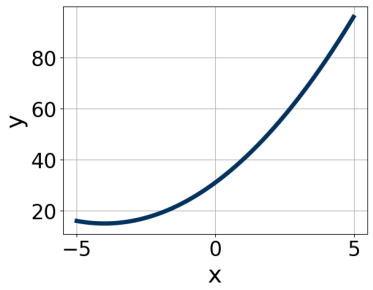
A.



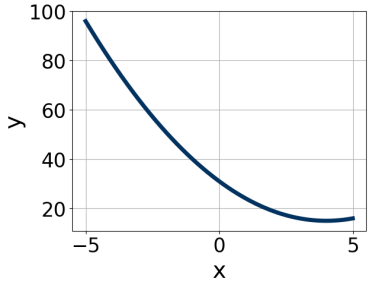
C.



B.



D.



E. None of the above.

---

29. Solve the quadratic equation below. Then, choose the intervals that the solutions belong to, with $x_1 \leq x_2$ (if they exist).

$$18x^2 - 9x - 6 = 0$$

A. $x_1 \in [-1.49, -0.48]$ and $x_2 \in [-0.1, 0.46]$

B. $x_1 \in [-0.48, -0.37]$ and $x_2 \in [0.41, 1.42]$

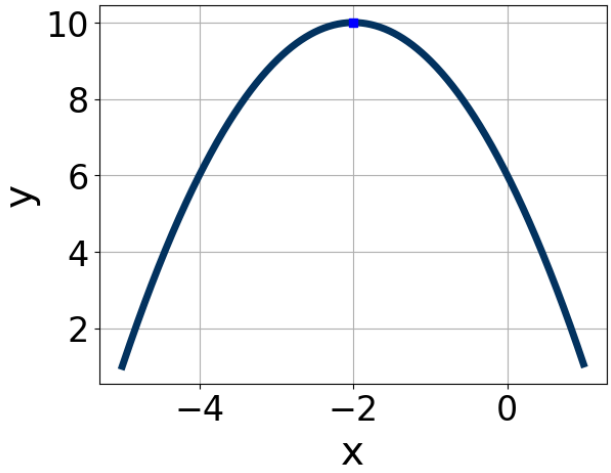
C. $x_1 \in [-7.54, -6.59]$ and $x_2 \in [15.45, 16.28]$

D. $x_1 \in [-22.45, -21.84]$ and $x_2 \in [22.52, 23.78]$

E. There are no Real solutions.

---

30. Write the equation of the graph presented below in the form $f(x) = ax^2 + bx + c$, assuming $a = 1$ or $a = -1$. Then, choose the intervals that a, b, and c belong to.



A. $a \in [-1.1, -0.4]$, $b \in [3, 6]$, and $c \in [-15, -10]$

B. $a \in [0.8, 2.9]$, $b \in [3, 6]$, and $c \in [10, 15]$

C. $a \in [0.8, 2.9]$, $b \in [-4, -1]$, and $c \in [10, 15]$

D. $a \in [-1.1, -0.4]$, $b \in [-4, -1]$, and $c \in [4, 7]$

E. $a \in [-1.1, -0.4]$, $b \in [3, 6]$, and $c \in [4, 7]$
